

EVM/RCN Development Status and Integration Plan to the Demonstrators

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XDAQ automation at the FNAL test bench

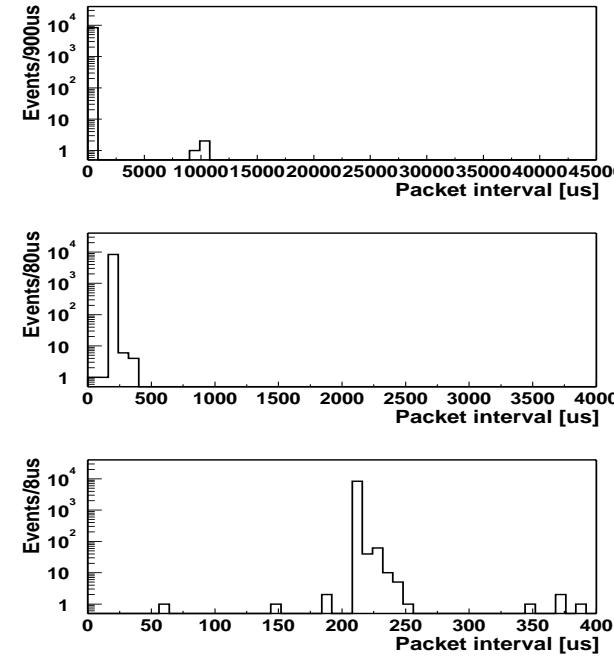
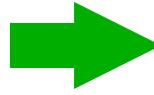
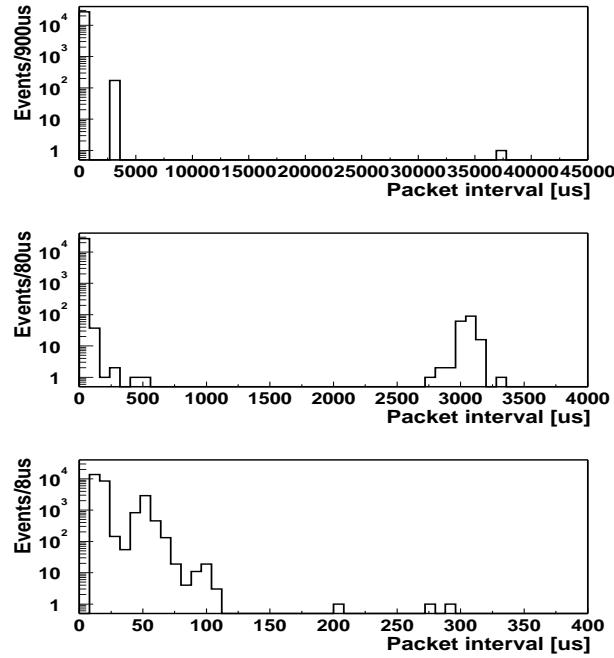
- Automated (or, Aziz's) XDAQ controller, axdaq
 - Scripting based on Christoph's work on jxdaq.
 - 5 XML tags are implemented. (<repeat>, <period>, <sleep/>, <output> and <shutdown/>)
 - Supplemental Perl code for automatic generation of XML configuration file.
- All code modification is stored as patch files in TriDAS CVS tree at FNAL. Switching between the original and axdaq versions is easy.

RCN development updates

- RT-Linux + ieee1394 driver worked.
- No progress on isochronous packet transfer.
- No progress on asynchronous transfer bug in the broadcast library.
- Effect of 'ACK' method is measured.
 - Remaining timing measurements:

	PtoP	RCN lib.BW/lat	Drop	Ack	FEC	Multi
Ethernet	○	○	○	○	○	○
1394 Asyn.	○	○	○	✗	✗	✗
1394 Iso.	✗	✗	✗	✗	✗	✗

Effect of the 'Ack' mechanism



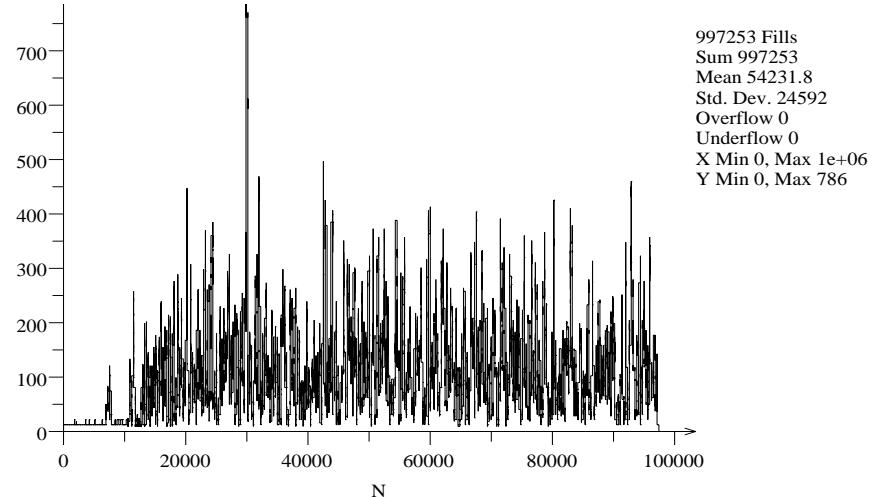
- EVM waits for an acknowledge packet from a RU before sending the next.
- Slower bandwidth, $1.1 \Rightarrow 0.2$ kHz
- Better timing distribution

Simulation updates

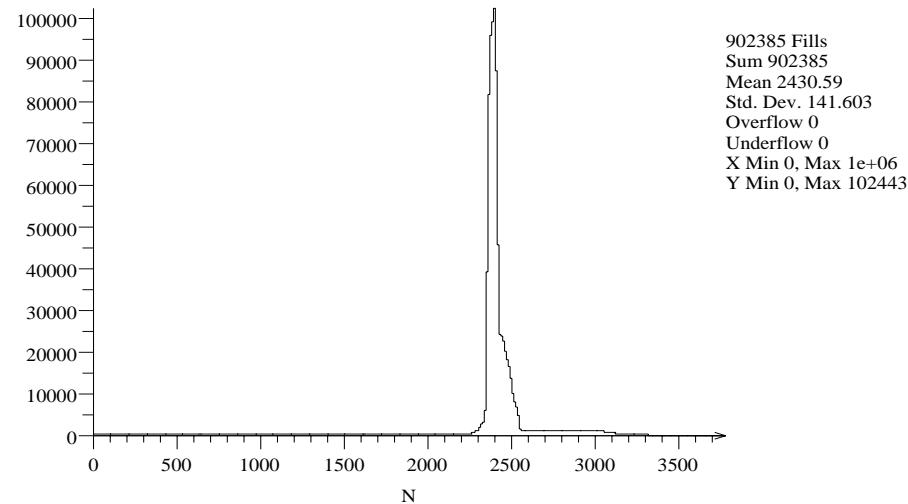
- CNCL based simulator
 - 32x32+1 nodes
 - Barrel shifter operation w/ XDAQ protocol
- Trying to use the Ptolemy based simulator.
 - EVM/RCN + XDAQ protocol
 - S.Aziz will be here on July 21st for a week.

Barrel shifter operation

Nr. of Busy Event IDs without RU Barrel Shifter



Nr. of Busy Event IDs with RU Barrel Shifter



- Faster and better stability w/ barrel shifter.
- More study is going on.

Items to be fixed before the integration

- Is EVM/RCN integrated into a demonstrator?
- If so, which demonstrator?
- What hardware do we (Fermi) need to provide?
- What are we aiming for?
(Performance? Feasibility?)
- When?
 - The RCN broadcast library will be put in the XDAQ
in august.
 - I.Suzuki will be here in autumn.